IN THE CLAIMS:

1. (Currently Amended) A ceramic honeycomb structure comprising a plurality of through-holes surrounded by partition walls, the ceramic honeycomb structure having an outer circumferential wall obtainable by firing a layer of a raw material applied to a circumference of the ceramic honeycomb structure wherein ~~(1)~~ a thermal expansion coefficient of ~~an~~ the outer circumferential wall ~~portion in the ceramic honeycomb structure~~ is larger than a thermal expansion coefficient, in a direction of a diameter, of an inside partition wall portion in the ceramic honeycomb structure~~, and stress~~ so that, when the structure is cooled from the firing temperature, compression is applied to the inside partition wall portion from the outer circumferential wall portion~~, (2) a raw material for said outer circumferential wall is given in a thickness sufficient to apply a stress to the inside partition walls from the outer circumferential wall around a whole surface of the outer circumferential wall, and (3) the outer circumferential wall portion has been made of a crystalline cordierite~~.

2. (Currently Amended) A ceramic honeycomb structure as defined in claim 1, wherein a material for the outer circumferential wall ~~portion~~ of the ceramic honeycomb structure

is the same as or different from a material for the ~~ceramic honeycomb structure~~ inside partition wall portion.

3. (Currently Amended) A ceramic honeycomb structure as defined in claim 1, wherein ~~a~~ the partition ~~wall~~ walls of the ceramic honeycomb structure ~~has~~ have a thickness of less than 0.1 mm.

4. (Currently Amended) A ceramic honeycomb structure as defined in claim 1, wherein the ceramic honeycomb structure has a cell density of the through-holes of 62 cells/cm^2 or more.

5. (Original) A ceramic honeycomb structure as defined in claim 1, wherein the outer circumferential wall portion is thicker than an inside partition wall portion of the ceramic honeycomb structure.

6. (Original) A ceramic honeycomb structure as defined in claim 1, wherein the ceramic honeycomb structure has an open frontal area of 86% or more.

7. (Original) A ceramic honeycomb structure as defined in claim 1, wherein the ceramic honeycomb structure has a bulk density of 0.26g/cm^3 or less.